ABSTRACT

An ion beam implanter includes an ion beam source for generating an ion beam moving along a beam line and an implantation chamber wherein a workpiece is positioned to intersect the ion beam for ion implantation of a surface of the workpiece by the ion beam. The ion beam implanter further includes a workpiece support structure coupled to the implantation chamber and supporting the workpiece. The workpiece support structure includes a first rotation member rotatably coupled to the implantation chamber and including an opening extending through the rotation member and aligned with an opening in a wall of the implantation chamber. The workpiece support structure further includes a second rotation member rotatably coupled to the first rotation member and having an axis of rotation offset from an axis of rotation of the first rotation member, the second rotation member overlying the opening of the first rotation member. The workpiece support structure also includes a third member fixedly attached to the second rotation member, the third member including a rotatable drive supporting the workpiece. The first rotation member, the second rotation member and the rotatable drive of the third rotation member rotate to move the workpiece along a path of travel for implantation of the implantation surface wherein a distance that the ion beam moves through the implantation chamber before striking the implantation surface of the workpiece is constant.